

ABSTRACT OF THE DISCLOSURE

An air-fuel ratio control system for an internal combustion engine is provided which is capable of appropriately and promptly correcting variation in the air-fuel ratio of a mixture between cylinders and realizing a very robust air-fuel ratio control, even with a complicated exhaust system layout. The ECU of the system for control of the air-fuel ratio of a mixture supplied to first to fourth cylinders determines a feedback correction coefficient, calculates a cylinder-by-cylinder variation coefficient indicative of variation in air-fuel ratio between the cylinders, based on a model parameter of a model having the input of the feedback correction coefficient thereto and the output of the detected air-fuel ratio, identifies the model parameter, corrects a basic fuel injection amount such that the cylinder-by-cylinder variation parameter converges to a moving average value thereof, thereby calculating a cylinder-by-cylinder final fuel injection amount.